

6.0 ENVIRONMENTAL EFFECTS

Weed Establishment

Idaho has hundreds of weed species, however, only 36 are designated noxious by Idaho law (Prather et al. 2002). The word “noxious” simply means deleterious, and all listed weeds are deleterious by definition. The following mitigation pertains to all of Fremont County.

Confirmed sitings of the following noxious weeds have been identified in Fremont County (Prather et al. 2002): Black henbane (*Hyoscyamus niger*), Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), leafy spurge (*Euphorbia esula*), purple loosestrife (*Lythrum salicaria*) and yellow toadflax (*Linaria vulgaris*). Some species, such as downy brome (cheatgrass) (*Bromus tectorum*), are not listed as noxious but do impact the environment. Cheatgrass has increased the extent and frequency of wildland fires in the Great Basin and Upper Columbia River Basin with significant impacts in natural and fiscal resources (Billings 1994).

BEFORE CONSTRUCTION OF FUEL BREAKS, MOWING, DISKING OR OTHER DISTURBANCE

Survey and map invasive and noxious weeds occurring on site scheduled for construction. Determine infestation size and control weeds with appropriate methods (Table 34). Use a State-certified pesticide applicator for specific recommendations and chemical treatment. Train equipment operator on weed issues prior to start date. This training should include:

- Consequences of disturbance.
- Methods of prevention including cleaning equipment.
- Identification of problem plants in the immediate area.
- What to do when an invasive or noxious weed is sighted.

Decontaminate vehicles and equipment entering construction site to remove weed seeds and other propagules.

- Inspect equipment before entering project area.
- Wash equipment (if possible) to remove all plant parts including seeds and root.
- Prevent equipment from leaving site until inspections have been preformed.

Minimize soil disturbance.

DURING CONSTRUCTION OF FUEL BREAKS, MOWING, DISKING OR OTHER DISTURBANCE

Control all infestations on construction site (Table 34).

- Consult State-certified pesticide applicator.

Minimize and control vehicular traffic entering and exiting construction site, especially those within the decontamination boundaries.

- Decontaminate vehicles, equipment, and personnel.
 - Wash (if possible) equipment to remove all plant parts.
 - Inspect vehicles, equipment, and clothing.

Take precautions to prevent the spread of weeds.

- Avoid entering areas infested with weeds.

Minimize soil disturbance.

- Restrict vehicles to specified pathways.

Conduct surveys of project area every two weeks during the growing season (April - October) to confirm weed free status or identify new weed infestations.

AFTER CONSTRUCTION OF FUEL BREAKS, MOWING, DISKING OR OTHER DISTURBANCE

Decontaminate all outgoing equipment before permitting them to leave.

Survey all disturbed areas, adjacent areas, and destination areas for noxious weeds.

- Map infestations, critical sites, and sensitive areas.
- Treat weeds with appropriate method in a timely fashion (Table 34).
 - Use a State-certified pesticide applicator for specific recommendations.

Establish native perennial vegetation in all disturbed areas and monitor for emergence of non-native species.

Continue to monitor construction site and treat infestations until weeds no longer appear or are controlled equal to or better than before the commencement of the project.

Document all monitoring and treatment of noxious weeds.

Table 34: Simplified Weed Treatments.

Weed Species	Infestation Size	Likely Treatment
Black Henbane (Hyoscyamus niger)	Single Plant *Patch (Or multiple plants) *Large Infestation	Pull/Grub Chemical Chemical
Canada Thistle (Cirsium arvense)	Single Plant Patch (Or multiple plants) Large Infestation	Chop/Mow Chemical Chemical, Combo
Musk Thistle (Carduus nutans)	Single Plant Patch (Or multiple plants) Large Infestation	Pull/Grub Chemical Biological, Chemical
Leafy Spurge (Euphorbia esula)	Single Plant Patch (Or multiple plants) Large Infestation	Chemical Graze, Chemical Graze, Combo
Purple Loosestrife (Lythrum salicaria)	Single Plant Patch (Or multiple plants) Large Infestation	Pull/Grub Chemical Biological, Chemical
Yellow Toadflax (Linaria vulgaris)	Single Plant Patch (Or multiple plants) Large Infestation	Chemical Chemical Biological, Chemical
Cheat Grass (Bromus tectorum)	Single Plant Patch (Or multiple plants) Large Infestation	Does not apply Chemical, Graze Chemical, Graze, Combo

*Patch is denoted as a monoculture up to ¼ acre or irregular distribution up to an acre.

A large infestation is a monoculture over ¼ acre or irregular distribution over an acre or more.

Soil Erosion

To prevent soil erosion and establish permanent vegetation that is fire resistant Greenstripping is recommended. Greenstripping, or establishing strips of fire-resistant vegetation to reduce the spread of wildfire, is an established practice on BLM lands in Idaho (Pellant 1992). Greenstripping reduces wildfire spread by disrupting fuel continuity, reducing fuel accumulations and volatility and increasing the density of plants with higher moisture content. The reduction of the overall fuel load reduces the flame lengths and heat intensity produced on the greenstrips, but the increase in annual species composition and fine fuels produces increased rates of spread. Therefore, the following characteristics are important when selecting species for greenstripping on semiarid rangelands such as Fremont County: 1) adaptability to the range sites, 2) competitiveness with annual weeds, 3) ease of establishment, 4) low flammability, 5) open canopy and spacing, 6) palatability by livestock and wildlife (for efficient removal and control of litter and fine fuel buildup), and 7) resilience and re-growth capabilities.

Construction of Dry Hydrants

Environmental Effects to be considered: (1) Potential impact to riparian landowner. Is a land use agreement between the landowner and the Fire District required? Is a permit for a dry hydrant required by the state or a federal agency? If so, can the application for the permit be obtained at the county level? (2) Suitable hydrant location requiring certain water depth, composition of streambed or lake bottom, ease of digging, protection of hydrant during winter. Does this location pose a threat to terrestrial or aquatic wildlife species? Will the location survive winter temperatures?

Dry hydrant installation cost is estimated at \$750 to \$1,000 per hydrant including contractor labor and machine costs, 6-inch schedule 40 PVC pipe, a commercially made screen, and hydrant connector (Pohlman et al. 2003).

Restoration Guidelines Following a Wildland Fire

Areas that generally burn hot are likely to have the greatest alterations in soil characteristics to the landscape (Graham 2003). These alterations include but are not limited to: (1) loss of surface soil organic matter, (2) reduced ground cover resulting in decreased infiltration of water and increased surface runoff and peak flows, and (3) the formation of pedestals, rills, and gullies.

The NFP and the Idaho Plan address rehabilitation and restoration of burned areas and fire-adapted ecosystems. Consider the following site restoration guidelines:

- Fill in deep and wide fire containment lines
- Waterbar newly created roads or containment lines, as necessary, to prevent erosion
- Install sediment controls to prevent sedimentation of waterways
- Restore all fire staging areas with native seed mixes approved by BLM, NRCS, or other local experts

- Control all noxious weed invasions
- Evaluate the necessity to revegetate all or portions of the burn or areas impacted by fire suppression activities using native species by broadcast seeding, drilling, containerized stock or wildlings
- Encourage the use of plant stock from local collections of site-adapted stock
- Base decision to revegetate an area on inventories of affected areas for natural recovery that approaches pre-fire densities of native species
- Preclude off-road vehicle use in burned area for at least two growing seasons
- Continue monitoring until restoration is complete
- Conduct surveys of burned areas to assess damage to cultural resources.